

# Lower Snake Temperature Management

July 23, 2007

- General Observations
  - Lower Granite Pool
    - Temperature in Snake River at Lower Granite 19.2 °C (66.6 F)
    - Temperature of flow weighted inflow  $T_{crit} = 18.3$  °C
    - Heat gain in LWG pool 0.9-1.5 C
    - Travel time in LWG pool 5.5 days
      - Density stratified flow / underflow reducing time of travel
  - Snake River at Anatone  $Q_{5d} = 16.0$  kcf,  $T_{5d} = 22.9$  °C (73.0 F)
  - Clearwater River
    - Dworshak  $Q_{5d} = 9.7$  kcf,  $T_{5d} = 6.2$  °C (43.2 F)
    - Orofino  $Q_{5d} = 2.0$  kcf,  $T_{5d} = 25.3$  °C (77.5 F)
    - Lewiston  $T_{5d} = 12.0$  C (53.6 F)
    - Flow ratio  $Q_{cr} / Q_{sr@lwg} = 42.2\%$

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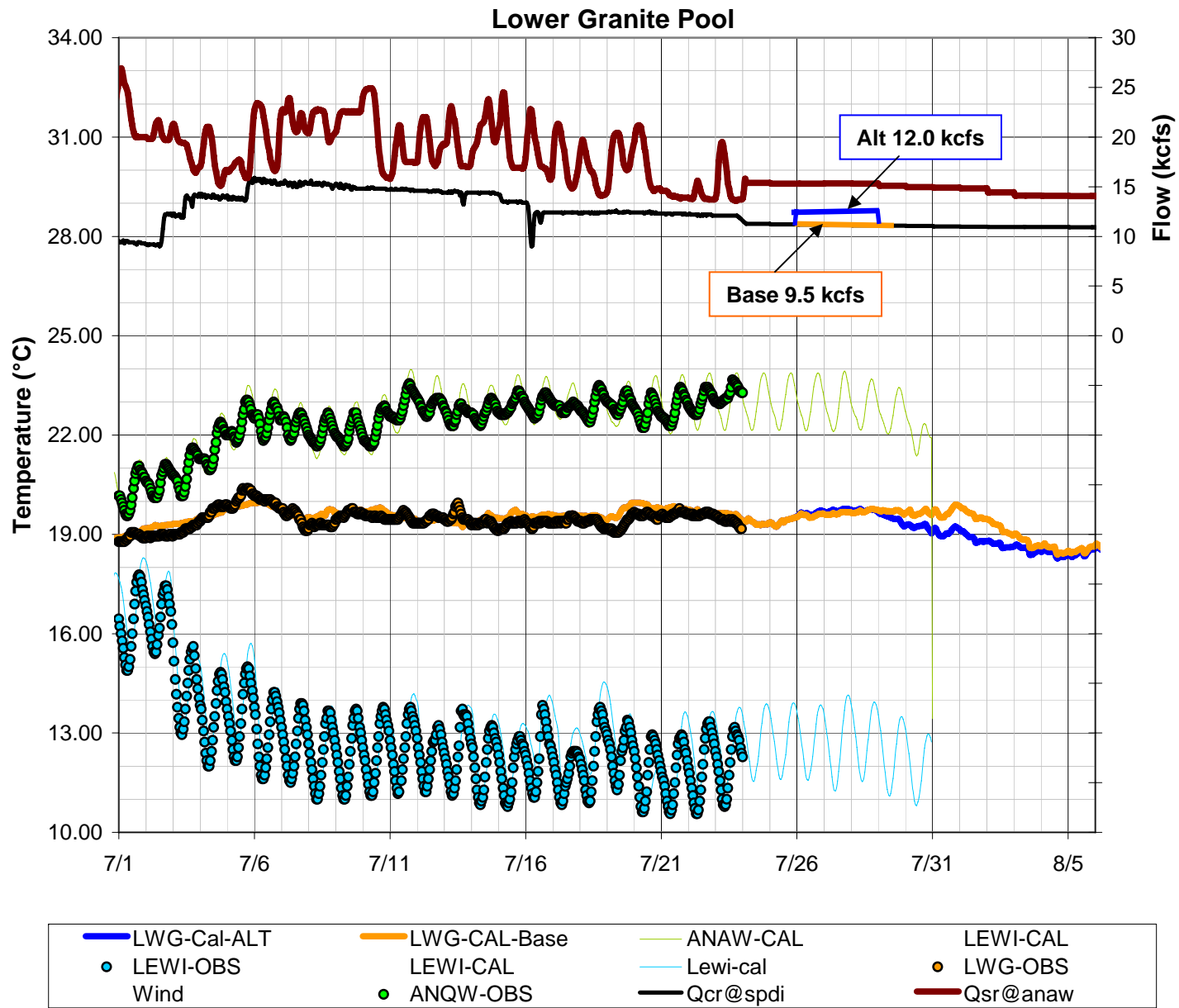
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- Forecasts
  - Weather (NOAA)
    - Hot Temperatures predicted for later this week at Lewiston ID
      - July 24 25 26 27 28 29 30
      - Tue Wed Thu Fri Sat Sun Mon
      - Highs 89 99 103 99 100 96 95
      - Lows 58 61 66 70 66 63 64
    - Hourly weather data from 2006 for July 31-August 15
  - Flows
    - Clearwater River at Orofino (STP) falling from 1.8 to 1.5 kcfs by July 30
    - Snake River at Anatone (STP) constant 15 kcfs through July 30
    - Dworshak Operations (STP inflow 1.1 kcfs average through Sept 1)
      - Base Plan 9.5 kcfs through July 31
        - » 39 days through August 31 – 7 days@7.3 kcfs and 32 days @ 9.5 kcfs =>1535 ft
      - Alternative Plan 9.5 kcfs through July 25, 12 kcfs July 26-28, 9.5 kcfs July 29-31
        - » 39 days through August 31 – 10 days@7.3 kcfs and 29 days @ 9.5 kcfs =>1535 ft

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15 July 23, 2007

- Results of CEQUAL-W2 simulation (June 1-August 31 simulation)
  - Base Plan (Flat 9.5 kcfs)
    - SR Temps at LWG slight cooling to 19.3 on July 24
    - SR Temps at LWG gradually increasing to about 20 C August 1
    - SR Temps at LWG cooling trend in August
  - Alternative Plan (3 days at 12 kcfs)
    - Same as Base plan until July 29
    - Up to (.8 C) cooler temperatures during July 30-August 2
    - Warmer temperatures later in summer/fall due to elevated DWR flows now



2007

